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(54) Wax antiadhesive composition

(57) This composition contains in aqueous medium, at least a self emulsible wax having a melting point between 45 and 110°C. A preferred embodiment comprises the use of a mixture of a synthetic wax of vegetal origin, a mineral wax and a micro cristalline wax. This composition, applied onto a support such as a wall, is appropriate as a protection coating against bill-sticking, penetration and hooking of graffitis and/or paint and against adherence of dust and various polluting agents.

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Wax-based antiadhesive composition

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SPECIFICATION

Wax-based antiadhesive composition

This invention concerns an antiadhesive product to be utilized as a covering for walls and the like as a protection against posting as well as penetration by, and sticking of, graffiti and/or paint and against adherence of various types of dust and pollutants in and on this type of substrate.

Antiadhesive compositions have already been proposed for protecting walls against unauthorized posting. These compositions notably contain silicone oil.

Such compositions however have the drawback of drying very rapidly and because of this of losing their antiadhesive capacity. Furthermore, when applied on backings such as walls they tend to become sticky and dust absorbant thereby causing a change in colour and hence harming the appearance of the walls on which they are applied.

Also, in certain cases these compositions give rise to problems of permeability to gases and can therefore constitute a source of trouble, in particular for walls of natural stone which have to be able to "breathe".

Silicone oil-based compositions entail the drawback of a high cost price and difficult storage. Their duration of efficiency is also limited.

The applicant has now discovered a wax-based antiadhesive composition that does not entail the abovementioned drawbacks. This composition makes it possible to obtain on the walls to be covered, a thin and uniform film having anti-adhesive properties in relation to posters, adhesive labels, various types of glues and paints, as well as dust and polluting agents while letting the material "breathe". The composition enables one to cover the particles constituting the material of the said wall by a protective microfilm. The compositions of this invention also have the advantage of being stable over time and of not leaving any trace on the wall covered.

The compositions can have a duration of efficiency of, say, 2 to 4 years.

According to the invention, the antiadhesive composition is basically characterized by the fact that, in an aqueous medium, it contains at least one synthetic wax derived from vegetable wax, a non-ionic emulsifier therefor and at least one microcrystalline wax, the waxes having a melting point between 45 and 110°C.

Preferably the synthetic wax derived from vegetable waxes associated with a non-ionic emulsifier is present in an amount of 0.5 to 12% by weight, in particular between 2 to 10% by weight and preferably between 2 and 7% by weight, based on the weight of the total composition.

Synthetic waxes derived from vegetable waxes, preferably used, as those having a melting point between 68 and 78°C, in particular waxes containing carnauba wax.

The most preferred non-ionic emulsifiers are alcohols or oxyethylenated alkylphenols, in particular oxyethylenated alkylphenols with 6 to 12 moles of ethylene oxide and preferably 9 to 12 moles of ethylene oxide and fatty oxyethylenated alcohols with 3 to 30 moles of ethylene oxide.

In addition to synthetic wax derived from the abovementioned vegetable wax, the composition of this invention can contain other waxes and, preferably, at least one mineral wax which is an oxyethylenated wax and/or ester wax having a melting point between 40 and 65°C, preferably a paraffinic wax and notably a paraffinic wax called Petrolatum or blond paraffin.

Utilization of the microcrystalline wax makes it possibile to obtain good distribution of the other waxes in the composition and therefore improve the surface coating and antiadhesive properties of the walls covered by the composition.

The microcrystalline wax most preferred is one having a melting point between 58 to 60°C.

The optional mineral and the microcrystalline wax are preferably present in an amount between 0.05 to 40% by weight based on the weight of the synthetic wax. In particular, they may be present in the compositions in an amount between 0.05 and 6% by weight based on the total weight of the composition. These waxes are preferably present in an amount between 2 to 6% by weight based on the total weight of the composition.

It is desirable to add a surface active agent, for example an anionic surface active agent, to the composition in addition to the non-ionic surface active emulsifier.

Among anionic surface active agents there can be mentioned soaps derived from natural or synthetic fatty acids such as, in particular, oleic acid as well as the salts thereof with alkaline metals such as potassium.

A particularly advantageous embodiment involves the use of a mixture of anionic and non-ionic surface active agents. According to a preferred embodiment, this mixture comprises 90 to 95% anionic surface active agent and 5 to 10% non-ionic surface active agent.

Preferably, this mixture is present in an amount between 0.05 to 15% by weight and, in particular, between 0.05 to 4% by weight, based on the total weight of the composition. It is particularly preferred to use a mixture of surface active agents in the compositions according to the invention in an amount of 1 to 1.5% by weight based on the total weight of the composition.

When a surface-active agent is used in the composition the latter may also contain one or more organic solvents. According to the invention, the most suitable organic solvents are wax solvents;

particular mention can be made of hydrocarbon halogenated derivatives, benzene, toluene, and white spirit.

A preferred embodiment of the invention involves the use of white spirit, in particular one containing less than 5% aromatics or a trichloro-1,1,1-ethane as sold under the name of "Baltane" by Rhone-Poulenc.

The solvent or solvent mixture is preferably present in an amount between 1 and 20% by weight and, in particular, between 5 and 15% by weight, based on the total weight of the composition.

It is to be understood that it is possible to add any other component or substance enabling the antiadhesive effect sought to be obtained, or to give the product further properties.

For this, it is possible to add to the compositions, according to the invention, silicone oil, preferably in an amount between 0.01 and 10% by weight. Preferably this silicone oil should be miscible with water which constitutes the basis of the compositions according to the invention. It is also possible to use preservative and/or bactericide and cryptogamic agents such as chloroacetamines.

It goes without saying that the proportions indicated are those of a composition intended for direct application on the substrate to be treated. Actually it can be prepared by dilution prior to application of a concentrated composition. Concentrated compositions suitably have a concentration 5 to 15 times that of the compositions of this invention.

The compositions of the present invention can be prepared by a process which is characterized by the fact that, while stirring one melts the waxes in the same weight of water at a temperature 3 to 4°C above the melting point of the wax having the highest melting point. Then, generally while stirring, the mixture obtained is poured in water at room temperature (about 20°C).

Addition of surface active agent or further solvents as well as the other components can be carried out at any time, and, in particular, by addition to the composition resulting from the introduction of the wax and water mixture in water.

The treatment of the substrate (backing) consists of applying the composition of this invention to the surfaces to be treated by means of normal coating tools such as brushes, or guns.

After the treatment it can be seen that posters applied to the backing do not adhere or at least are easily removed. Generally, they slip off and fall down by themselves.

Graffiti or paint applied to this type of backing, generally do not adhere and can be removed by brushing.

According to the invention, the composition also has the advantage of being capable of being removed by means of a removing agent; this is useful in particular when the composition according to the invention is applied on extremely rough backings on which it is hard to remove traces of paint through simple brushing. In such a situation, the traces of graffiti can easily be removed by removing the composition by means of a removal agent for taking off the protective film formed on the rough backing.

The best results can be obtained when the composition, according to the invention, is applied to absorbant backings.

The following Examples further illustrate the present invention.

EXAMPLE 1

	% by weight
Synthetic wax derived from vegetable wax (melting point 75°C) sold under the name WAX OFR by R.F.O.	2.4
Mineral wax called blond paraffin sold under the name PA/BL by TISCCO (melting point, approx. 55°C)	0.6
Microscrystalline wax with melting point (58—60°C) sold under the name of 23—60 by TISCCO	0.6
Water qsp	100

In the same weight in water, one adds the three above-mentioned waxes and the temperature is to be brought to about 78°C while stirring. When a perfectly uniform mixture is obtained, while stirring, it is to be poured into cold water (20°C) using a homogeniser. In this way a composition is obtained in which the wax is spread out uniformly. This wax has no tendency to separate during storage. Applied on a wall, one observes the formation of a transparent film. The posters stuck on this type of backing fall off in a few hours.

EXAMPLE 2

The following example is intended to illustrate a variant of the invention making use of a mixture of surface active agents and solvents.

	% in weight
Microcrystalline wax sold under the name 2360 by TISCCO (melting point 58—60°C)	2
Paraffinic wax (blond paraffin) sold under the name of PA/LB by TISCCO	4
Mixture comprising 92% potassium oleate soap and 8% oxyethyleneated alkylphenol with 10 moles of ethylene oxide	1.2
White Spirit	10
Water qsp	100

The composition is prepared as described above with the sole exception that the cold water contains the surface-active and white spirit mixture. Also, subsequent to application on a porous backing, one notices a thin and non-sticky film.

Graffiti applied by a spray gun are easily removed by brushing of the backing.

EXAMPLE 3

The following composition is prepared in the same way as in Example 1:

	% in weight
OFR wax	5
Wax PA/LB	1.5
Wax 2360	1.5
Water qsp	100

This composition is applied to a facade by brush.

The dust on the surface is easily removed by brushing which makes sand blasting of the facade unnecessary.

Furthermore, the film formed in this way can be eliminated by application of a hot water spray at approximately 80°C which makes unnecessary installation of scaffolding or other costly equipment required for cleaning the wall.

CLAIMS

1. An antiadhesive composition which contains, in aqueous medium, at least one synthetic wax derived from vegetable wax, a non-ionic emulsifier therefor and at least one microcrystalline wax, the waxes having a melting point between 45 and 110°C.

2. A composition according to claim 1 in which the vegetable-based synthetic wax is present in an amount between 0.5 and 12% by weight based on the weight of the composition.

3. A composition according to claim 1 or 2 in which the wax derived from vegetable wax has a melting point between 68 and 78°C.

4. A composition according to any one of claims 1 to 3 which in addition contains a mineral wax having a melting point between 40 and 65°C.

5. A composition according to claim 4 in which the said mineral wax is a paraffinic wax.

6. A composition according to claim 4 or 5 in which the mineral wax and/or microcrystalline wax are present in an amount between 0.05 and 40% by weight based on the weight of the synthetic wax derived from vegetable wax.

7. A composition according to any one of claims 4 to 6 in which the mineral wax and the microcrystalline wax are present in an amount between 0.05 to 6% by weight based on the weight of the composition.

8. A composition according to any one of the preceding claims in which the non-ionic emulsifier is an oxyethylenated alkylphenol with 6 to 20 moles of ethylene oxide or a fatty oxyethylenated alcohol with 3 to 30 moles of ethylene oxide.

9. A composition according to claim 6 or 7 which in addition contains an anionic surface-active agent.

10. A composition according to claim 9 in which the anionic surface-active agent is a soap derived from a natural or synthetic fatty acid.

11. A composition according to claim 1 substantially as described in any one of the Examples.

12. Process for the preparation of a composition as claimed in any one of claims 1 to 11, which comprises melting the waxes in the same weight of water while stirring, at a temperature 3 to 4°C above the melting point of the highest melting wax and pouring the resulting mixture into water at room temperature.

13. A composition as defined in claim 1 whenever prepared by a process as claimed in claim 12.

14. Process for the treatment of a substrate which comprises applying thereto a composition as claimed in any one of claims 1 to 11 and 13 in order to protect it against posters, stickers, graffiti, paint, dust and other pollutants.

15. A concentrate from which a composition as claimed in any one of claims 1 to 11 and 13 can be obtained by dilution.

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